

WE CLAIM:

1. A method for providing a common operating system, comprising:
defining operating system components;
identifying dependencies of the operating system components;
creating component groups such that the operating system components in a group share common dependencies;
establishing dependency rules among the component groups such that each operating system component is dependent on a minimum number of other operating system components; and
enforcing the dependency rules such that the execution of an operating system component implicates the execution of a minimum number of other operating system components, wherein the common operating system provides a base operating system layer that is configured to support the operating system components.
2. The method of Claim 1, wherein creating component groups reduces the dependencies among the operating system components.
3. The method of Claim 1, wherein creating component groups improves operating system serviceability by providing a framework that assists in transforming the operating system from a monolithic system into a componentized system.
4. The method of Claim 1, wherein creating component groups further comprises providing a subset of headers such that dependencies among operating system components are reduced.
5. The method of Claim 1, wherein identifying dependencies further comprises determining the position of the operating system components within the operating system structure.

6. A system comprising:
 - a common operating system that is constructed according to a method of reducing dependencies, the method comprising:
 - defining operating system components;
 - identifying dependencies of the operating system components;
 - creating component groups such that the operating system components in a group share common dependencies;
 - establishing dependency rules among the component groups such that each operating system component is dependent on a minimum number of other operating system components; and
 - enforcing the dependency rules such that the execution of an operating system component implicates the execution of a minimum number of other operating system components, wherein the common operating system provides a base operating system layer that is configured to support the operating system components.
7. The system of Claim 6, further comprising a hardware abstraction layer that is arranged to provide an interface between the operating system components and hardware devices.
8. The system of Claim 6, further comprising a kernel that is arranged to provide services to the operating system components.
9. The system of Claim 6, further comprising an operating system dynamic link library that includes functions for executing operating system applications.
10. The system of Claim 6, further comprising a subsystem dynamic link library layer that is arranged to support application program interfaces such that the application program interfaces are limited to basic operating system components

11. The system of Claim 6, further comprising a networking layer that is arranged to support network communication functionality of operating system applications, and that is further arranged to test network properties of the operating system components.

12. A common operating system, comprising:

- a hardware abstraction layer that is arranged to provide an interface between operating system components and hardware devices;
- a kernel that is dependent on the hardware abstraction layer, and that is arranged to provide services to the operating system components;
- an operating system dynamic link library that is dependent on the kernel, the operating system dynamic link library including a library of functions for executing operating system applications;
- a subsystem dynamic link library layer that is dependent on the kernel, and that is arranged to support application program interfaces such that the application program interfaces are limited to basic operating system components; and
- a networking layer that is dependent on the kernel, and that is arranged to support network communication functionality of operating system applications;

wherein the kernel, the operating system dynamic link library, the subsystem dynamic link library layer, and the networking layer are arranged to minimize the number of dependencies among the operating system components.

13. The system of Claim 12, wherein the kernel comprises:

- a file system that is arranged to loading of data from storage media; and
- device drivers for controlling the hardware devices.

14. The system of Claim 12, wherein the application program interfaces comprise dynamic link libraries for memory management, graphical device interface,

user interface elements, communication programs, and security and encryption applications.

15. The system of Claim 12, wherein the networking layer comprises transmission control protocol/internet protocol (TCP/IP) stack, dynamic host configuration protocol client, automatic private internet protocol addressing, domain name system client, and network basic input/output operating system over TCP/IP.

16. The system of Claim 12, wherein networking layer tests network properties of the operating system components.

17. The system of Claim 12, further comprising a logon client that is arranged to provide functionality for allowing a user to logon to the common operating system.

18. The system of Claim 12, further comprising a local security authentication server that provides basic functionality for security applications.

19. The system of Claim 12, further comprising a component object module that is arranged to provide a software architecture for building component-based applications.

20. The system of Claim 12, further comprising a runtime library that comprises a library of routines that are bound to a program during execution.

21. The system of Claim 12, further comprising a service control manager module that is arranged to provide management of operating system services.

22. The system of Claim 12, further comprising a session management server that is arranged to manage multiple user sessions.

23. The system of Claim 12, further comprising a plug and play manager that is arranged to support plug and play installation of device drivers.

24. The system of Claim 12, further comprising a remote procedure call infrastructure that is arranged to allow a process to call code in a separate process